CLAIMS

1. A method for detecting a signal burst transmitted on the initiative of a sender on a radio channel listened to by a receiver system, the transmitted burst representing a predetermined digital sequence, in which method channel parameters representing a statistical behavior of the radio channel are estimated and a detection magnitude is evaluated on the basis of the estimated channel parameters and of a correlation between a signal received at the receiver system and the predetermined digital sequence, wherein said estimated channel parameters comprise moments of order greater than 2 of the gain on the radio channel.

2. The method as claimed in claim 1, in which said estimated channel parameters comprise moments of order 0 to k of the gain on the radio channel, where k is an integer larger than 2.

3. The method as claimed in claim 1, in which the signal received is subjected to a filtering matched to the predetermined digital sequence so as to obtain said correlation in the form of a complex signal having a first component on an in-phase path and a second component on a quadrature path.

4. The method as claimed in claim 3, in which the evaluated detection magnitude is proportional to

$$\left(\sum_{n=0}^{k}\frac{1}{n!\left(\sqrt{N_0}\right)^n}.H_n\left(\frac{z_x}{\sqrt{N_0}}\right).ma_{x,n}\right).\left(\sum_{n=0}^{k}\frac{1}{n!\left(\sqrt{N_0}\right)^n}.H_n\left(\frac{z_y}{\sqrt{N_0}}\right).ma_{y,n}\right),$$ where N_0

denotes the estimated power of the noise on the radio channel, z_x and z_y denote said first and second components, $ma_{x,n}$ and $ma_{y,n}$ denote the moments of order n of the gain on the in-phase path and on the quadrature path respectively, H_n denotes the Hermite polynomial of order n and k is an integer larger than 2.

5. The method as claimed in claim 1, in which said sender is a mobile terminal, said receiver system belongs to a radiocommunication network and in which said burst is sent so as to request access to the network.

6. The method as claimed in claim 1, in which said sender comprises a base station of a radiocommunication network, said receiver system forms part of a mobile terminal, and in which said burst is sent for the temporal synchronization between the sender and the receiver system.

7. The method as claimed in claim 1, in which the detection of the burst is utilized to select fingers of a rake receiver.

8. The method as claimed in claim 1, in which the burst belongs to a radio signal sequence sent periodically, and in which said moments are estimated over a duration covering several periods of said radio signal sequence.

9. A radio receiver system capable of detecting a signal burst transmitted on the initiative of a sender on a radio channel listened to by the receiver system, the transmitted burst representing a predetermined digital sequence, the receiver system comprising means for estimating channel parameters representing a statistical behavior of the radio channel and means for evaluating a detection magnitude on the basis of the estimated channel parameters and of a correlation between a signal received at the receiver system and the predetermined digital sequence, wherein said estimated channel parameters comprise moments of order greater than 2 of the gain on the radio channel.

10. A radio receiver system as claimed in claim 9, in which said estimated channel parameters comprise

moments of order 0 to k of the gain on the radio channel, where k is an integer larger than 2.

11. A radio receiver system as claimed in claim 9, further comprising means for subjecting the received signal to a filtering matched to the predetermined digital sequence so as to obtain said correlation in the form of a complex signal having a first component on an in-phase path and a second component on a quadrature path.

12. A radio receiver system as claimed in claim 11, in which the evaluated detection magnitude is proportional to

$$\left(\sum_{n=0}^{k}\frac{1}{n!\left(\sqrt{N_0}\right)^n}.H_n\left(\frac{z_x}{\sqrt{N_0}}\right).ma_{x,n}\right).\left(\sum_{n=0}^{k}\frac{1}{n!\left(\sqrt{N_0}\right)^n}.H_n\left(\frac{z_y}{\sqrt{N_0}}\right).ma_{y,n}\right),$$

where N_0 denotes the estimated power of the noise on the radio channel, z_x and z_y denote said first and second components, $ma_{x,n}$ and $ma_{y,n}$ denote the moments of order n of the gain on the in-phase path and on the quadrature path respectively, H_n denotes the Hermite polynomial of order n and k is an integer larger than 2.

13. A radio receiver system as claimed in claim 9, belonging to a radiocommunication network, said sender being a mobile terminal, and said burst being sent so as to request access to the network.

14. A radio receiver system as claimed in claim 9, forming part of a mobile terminal, said sender comprising a base station of a radiocommunication network, and said burst being sent for the temporal synchronization between the sender and the receiver system.

15. A radio receiver system as claimed in claim 9, further comprising means for utilizing the detection of the burst to select fingers of a rake receiver.

16. A radio receiver system as claimed in claim 9, in which the burst belongs to a radio signal sequence sent periodically, and in which said moments are estimated over a duration covering several periods of said radio signal sequence.